



A.D. 1845 N° 10,588.

SPECIFICATION

OF

JAMES HAMER.

ENEMA SYRINGES, AND STOMACH AND
OTHER PUMPS.

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Enema Syringes, and Stomach and other Pumps.

HAMER'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JAMES HAMER, of Wardour Street, Saint James', Machinist, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Seventh day of April, in the eighth year of Her reign, did, for
5 Herself, Her heirs and successors, give and grant unto me, the said James Hamer, Her especial licence, full power, sole privilege and authority, that I, the said James Hamer, my exors, admors, and assigns, or such others as I, the said James Hamer, my exors, admors, or assigns, should at any time
10 agree with, and no others, from time to time and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "IMPROVEMENTS IN ENEMA SYRINGES, AND IN STOMACH AND OTHER PUMPS;" in which said Letters Patent is contained a proviso, that I,
15 the said James Hamer, shall cause a particular description of the nature of my said Invention, and in what manner the same is to be performed, to be inrolled in Her said Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said in part recited Letters Patent, as in and by the same, reference being thereunto had, will
20 more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said James Hamer, do hereby declare that the nature of my said Invention, and the manner in which the same is to be performed, are fully described and ascer-

Hamer's Improvements in Enema Syringes, and in Stomach and other Pumps.

tained in and by the following statement thereof, reference being had to the Drawing hereunto annexed, and to the figures and letters marked thereon (that is to say):—

My Invention consists of combining two pistons on the same piston rod, such pistons working in two cylinders of different diameter, so that during the up stroke and the down stroke of the piston rod a constant flow of fluid will be passing out of the pump, whether the same be made suitable for enema syringes or for stomach or other pumps.

And in order that my Invention may be most fully understood and readily carried into effect, I will proceed to describe the Drawing hereunto annexed, in the various Figures of which the same letters are used to indicate the same parts.

DESCRIPTION OF THE DRAWING.

Figure 1 shews a section of an enema syringe constructed according to my Invention, or the same would be suitable for a stomach pump if the lower end were made properly for having a suction pipe affixed thereto. *a*, *b*, are the two pump cylinders, in which the two pistons *c* and *d* respectively work, the larger cylinder *a* being of twice the sectional area of the other cylinder *b*, hence a given length of the cylinder *a* will contain twice the quantity of fluid which the same length of the cylinder *b* will contain. The object of this arrangement will be better understood when the working of the parts is fully described. The piston *c* has a passage through it with a valve, but the piston *d* is a solid piston, such as is used in an ordinary force pump, and the two pistons are fixed to the same piston rod. The cylinder *b* passes into and is fixed within the cylinder *a*, there being a space between the two cylinders, which serves as an air chamber in working the pump, or the space may be filled up. In working this pump, the fluid in the up stroke of the piston rod will by the piston *c* be raised up one half, passing away at the outlet *e*, the other half passing into the cylinder *b*, the fluid following the piston *d* into the cylinder *b*; and in the down stroke of the piston rod the fluid below the piston *c* will pass through that piston as it descends, and the fluid in the cylinder *b* will, by the descent of the piston *d*, force the fluid out of the cylinder *b* through the opening or outlet *e*; by which it will be perceived that one-half of the fluid which at the down stroke has passed above the piston *c* will pass out of the pump barrel *a* at the outlet *e* in the ascent of the piston rod, and the other half of the fluid will pass out at *e* in the descending stroke, thus keeping up a constant flow from the pump both in the up and down stroke of the piston rod. And I would state, that when spherical valves are

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used I prefer that the cups in which they move above the seats should have projecting ribs, so that the valves should have but little lateral play. Figure 2 shews a vertical section, and Figure 3 a plan, of a pump made according to my Invention, suitably arranged for a water or other pump, which may be
5 worked by hand, or by other power by connecting the upper part of the piston rod with suitable apparatus. The parts of this pump, it will be seen, are marked with the same letters of reference, and the description above given is equally applicable to this pump as to that before referred to; it will not, therefore, be necessary to repeat the same. I have not thought it necessary to
10 shew any air vessel, but pumps, according to my Invention, may, if desired, have air vessels applied thereto.

Having thus described the nature of my Invention, and the best means I am acquainted with for performing the same, I would have understood that I do not claim any of the parts separately, nor do I confine myself to the
15 details shewn, so long as the peculiar character of my Invention as herein described retained; but what I claim is, the mode of constructing enema syringes, and stomach and other pumps, by combining two pistons on the same piston rod, and causing them to work in two cylinders of different diameters, so as to obtain a constant flow of fluid at the up and down stroke, as herein
20 described.

In witness whereof, I, the said James Hamer, have hereunto set my hand and seal, this Seventh day of October, in the year of our Lord One thousand eight hundred and forty-five.

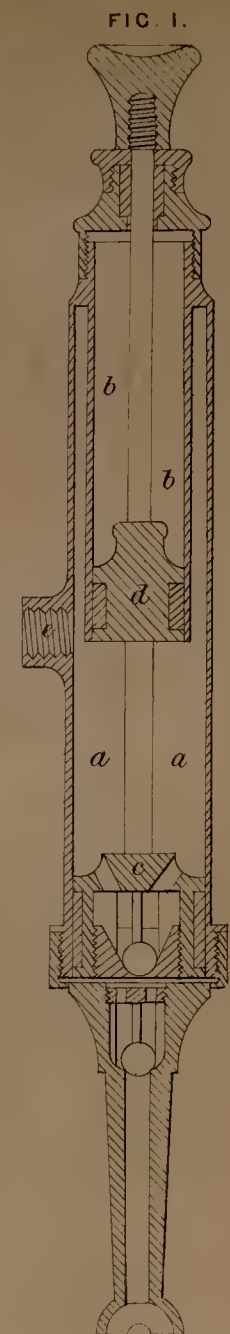
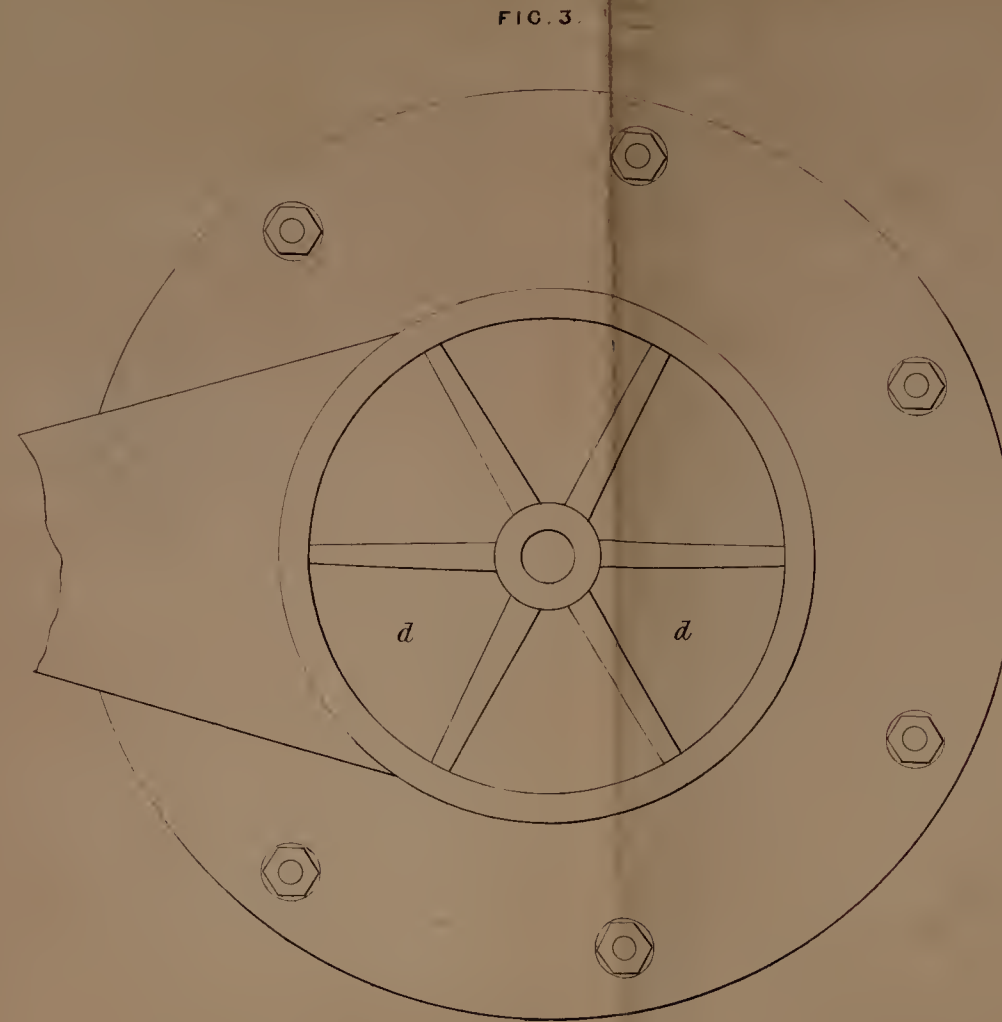
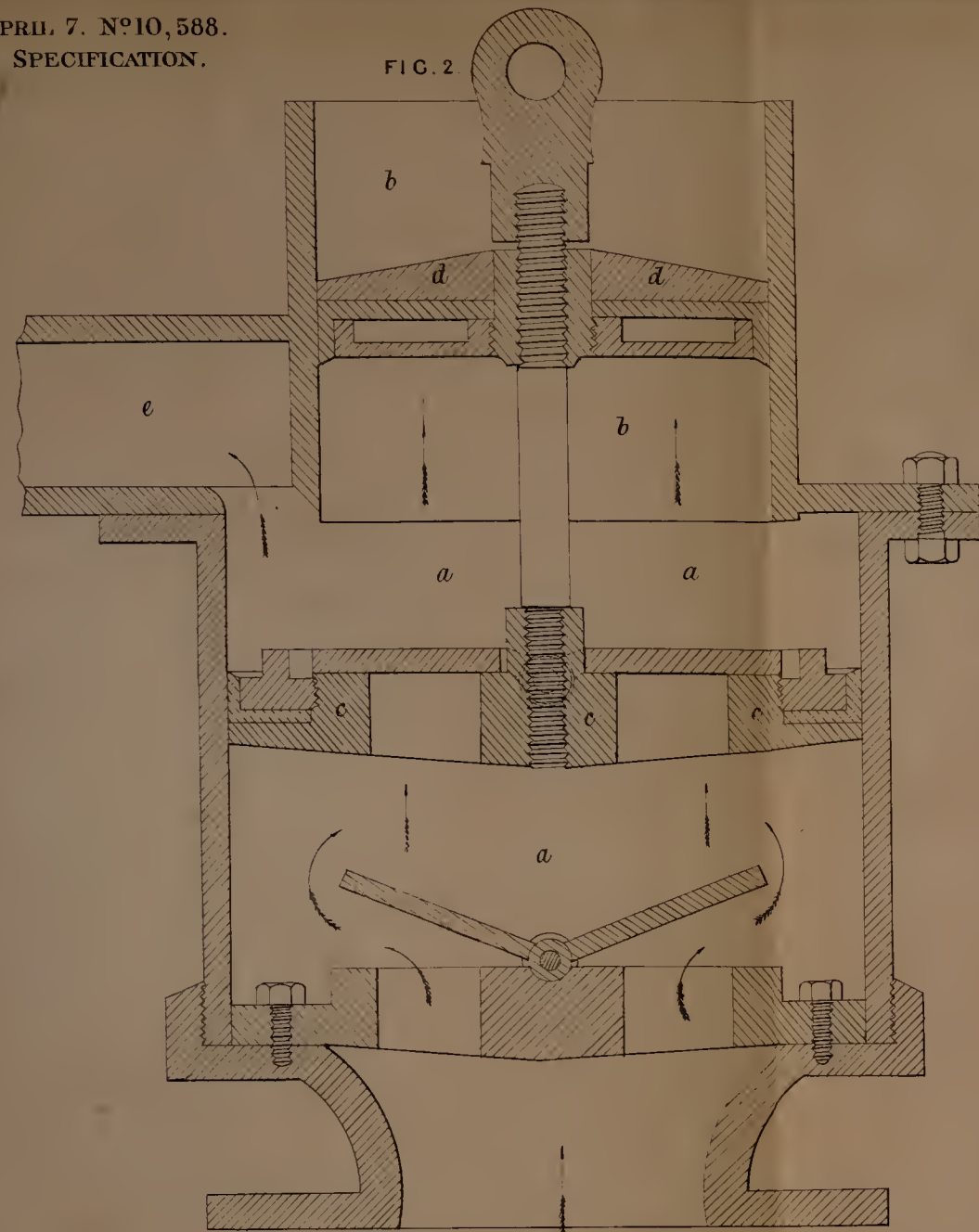
JAMES (L.S.) HAMER.

25 AND BE IT REMEMBERED, that on the Seventh day of October, in the year of our Lord 1845, the aforesaid James Hamer came before our said Lady the Queen in Her Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the
30 tenor of the Statute made for that purpose.

Enrolled the Seventh day of October, in the year of our Lord One thousand eight hundred and forty-five.

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE
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The enrolled drawing is colored

Drawn on Stone by Malby & Sons

